

**861.2.02 Timber Poles****A. Requirements**

1. Select timber poles from plants listed on QPL 50.
2. Ensure that the poles that meet the requirements of the latest revision of ANSI 05.1, in the National Electrical Safety Code published by the National Institute of Standards and Technology, with the following exceptions:
  - a. Section 2 Definitions—Modify the “Short Crook” definition as follows:  
“Any localized deviation from straightness within any section 5 ft (1.5 m) or less in length shall not be more than 1 in (25 mm) when measured with a straightedge parallel to the long axis of the pole.”
  - b. Section 4 Material Requirements, 4.4.9 Shape (1), (a)—shall read as follows:  
“For poles 50 ft (15 m) and shorter, of all species except northern white cedar, a straight line joining the edge of the pole at the butt and the edge of the pole at the top, in 90 percent or more of those poles supplied, shall not be distant from the surface of the pole at any point by more than 1 in (25 mm) for each 10 ft (3 m) of length between these points. In the remainder of those poles supplied (10 percent), the poles may have a deviation of 1 in (25 mm) for each 6 ft (1.8 m) of length when measured as above.”
  - c. Section 4 Material Requirements, 4.4.9 Shape (2)—shall read as follows:  
“Sweep in two planes (double sweep) - NOT PERMITTED.”
3. Use the class and length specified on the Plans.
4. You may peel poles by machine, except that poles more than 55 ft (17 m) long may be debarked and trimmed by hand in lieu of machine peeling. Trim so that you preserve the buttressing effects of all overgrown knots.
5. Unless otherwise specified or indicated on the Plans, frame poles with flat roofs and slab grains.
6. Frame, drill, and machine poles as necessary before preservative treatment.

**B. Fabrication**

Seasoning and Preservative Treatment: Where required, season and treat according to Section 863.

**C. Acceptance**

General Provisions 101 through 150.

**D. Materials Warranty**

General Provisions 101 through 150.

**Section 862—Wood Posts And Bracing****862.1 General Description**

This section includes the requirements for wood fence posts and bracing, and wood sign posts.

**862.1.01 Related References****A. Standard Specifications**

Section 859—Guard Rail Components

Section 863—Preservative Treatment of Timber Products

**B. Referenced Documents**

ASTM A 525M

QPL 50

## 862.2 Materials

### 862.2.01 Wood Fence Posts and Bracing

#### A. Requirements

1. Type

Use Southern Pine for wood posts and bracing. Use the dimensions specified on the Plans.

2. Physical Characteristics

Use posts and bracing that have the following characteristics:

- Be round or sawed, but all posts on a single Project shall be the same.
- Be cut from sound and solid trees and contain no unsound knots. Accept sound knots if the diameter of the knot does not exceed 1/3 of the diameter of the piece at the point where it occurs.
- Be free from decayed wood, rot, and red heart, and a ring shake and season checks that penetrate at any point more than 1/4 the diameter of the piece, or are greater than 1/4 in (6 mm) wide.
- Show at least four annual rings per 1 in (25 mm), and at least 1/3 summerwood unless using Southern Pine veneer cores.
- Have no short or reverse bends.

3. Draw a line from the center of the top to the center of the butt. The line shall not fall outside the body of the post, nor be more than 2 in (50 mm) from the geometric center of the post at any point.

4. The maximum allowable change in diameter of the post shall not exceed 1-1/2 in (38 mm) in 10 ft (3 m).

5. Accessories

Use metal caps to cover the tops of the posts. Use caps that are at least 0.008 in (0.20 mm) thick.

Use material that is aluminum or galvanized steel with 1.25 oz/ft<sup>2</sup> (380 g/m<sup>2</sup>) coating according to ASTM A 525M.

Use caps only when required by the Plans.

#### B. Fabrication

1. Peel all posts and bracing for their full length. Remove all bark and inner skin.

2. Trim knots close to the body of the post before treatment.

3. Saw all butts and tips square. For posts that will be driven, you may make the butt end pointed before treatment.

4. Seasoning and Preservative Treatment

Treat all posts according to the requirements of Section 863.

#### C. Acceptance

Check QPL 50 for pre-approved manufacturers that supply materials compliant with this Specification.

#### D. Materials Warranty

General Provisions 101 through 150.

### 862.2.02 Wood Sign Posts

#### A. Requirements

1. Unless otherwise specified, surface wood sign posts on all four sides to the dimensions specified.

a. Ensure wood sign posts meet the same quality requirements as wood guard rail posts in Subsection 859.2.04, "Wood Guard Rail Posts and Offset Blocks."

b. Ensure posts do not vary from the specified length by more than  $\pm 1$  in (25 mm).

c. Trim both ends of the posts.

2. Accessories

Use metal caps to cover the tops of the posts. Use caps that are at least 0.008 in (0.20 mm) thick.

Use material that is aluminum or galvanized steel with 1.25 oz/ft<sup>2</sup> (380 g/m<sup>2</sup>) coating according to ASTM A 525M.

Use caps only when required by the Plans.

#### B. Fabrication

1. Seasoning and Preservative Treatment

Bore and frame posts before treating them. Treat the posts according to the requirements of Section 863.

**C. Acceptance**

General Provisions 101 through 150.

**D. Materials Warranty**

General Provisions 101 through 150.

## **Section 863—Preservative Treatment of Timber Products**

**863.1 General Description**

This section includes the requirements for applying preservatives, conditioning, treating, inspecting, marking, testing, and documenting the necessary information for treated timber used in Department Work.

**863.1.01 Related References****A. Standard Specifications**

General Provisions 101 through 150.

**B. Referenced Documents**

American Wood Preservers Association (AWPA), C14, “Wood for Highway Construction— Preservative Treatment by Pressure Method”

AWPA C2

AWPA M2

AWPA M3

AWPA P9

AASHTO M 133

QPL 50

**863.2 Materials****863.2.01 Conditioning and Preservative Treatment****A. Requirements**

1. Condition and preservative treat all timber products to meet the requirements of American Wood Preservers Association (AWPA) Standard C14, “Wood for Highway Construction—Preservative Treatment by Pressure Method,” except as described in this Section.
2. Treatment Plants
 

Ensure treatment plants comply with quality control procedures in AWPA M3.

  - a. To expedite the work, the Department or its inspection agency will inspect timber at the treatment plant.
  - b. Before requesting an inspection, the authorities of the treatment plant shall acquaint themselves with the timber specification requirements and shall segregate the material to be inspected for Department work from other stock.
3. Preservatives
 

Use preservatives that meet the requirements in the AWPA Standard, unless otherwise specified in the Plans or the Specifications.

  - a. You may select one of three preservatives (creosote, pentachlorophenol, Chromated Copper Arsenate (CCA)) from the Materials and Usage Table in AWPA C14.
  - b. Ensure pentachlorophenol solutions have at least 5 percent pentachlorophenol, by weight, dissolved in the petroleum solvents specified or pentachlorophenol in AWPA P9, Type “A.”

**B. Fabrication**

1. As practicable, cut, frame, and bore timber before treatment.